UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,252	01/29/2002	Alistair Neil Coles	1509-270	3542

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER
SELLERS, DANIEL R

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _29 January 2002_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-33_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-33_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _29 January 2002_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☒ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Drawings

1.   New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because legends should be used where appropriate (see 37 CFR 1.84). Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

2.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "1" and "7" have both been used to designate a user device in figures 1a,1b, and 1c. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3.   The disclosure is objected to because of the following informalities: Pages 1-21

do not have the sections titled properly according to 37 CFR 1.77(c).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4.   Claims 1-4, 6, 10-20, 22, and 26-33 are rejected under 35 U.S.C. 103(a) as being

unpatentable over the combination of Slezak, U.S. Patent No. 6,647,119, Brandenburg

et al., U.S. Patent No. 6,115,688 (hereinafter Brandenburg), and the article by King et

al., "The Impact of Signal Bandwidth on Auditory Localization: Implications for the

Design of Three-Dimensional Audio Displays" (hereinafter King).

5.   Regarding claim 1, see Slezak column 7, line 62 – column 8, line 17,

An interactive audio system comprising:
an audio source;
a playing terminal connected to the audio source by means of a data link; and
an audio transducer and a user control device connected to the playing terminal, wherein the audio source is arranged to transmit a plurality of audio components to the playing terminal by means of the data link, each audio component comprising audio data relating to an audible sound or track, the playing terminal being arranged to output the audible sound or track corresponding to each audio component, by means of the audio transducer, the user control device being arranged to enable user-selection of one of the audio components as a focus component based on the user selecting one of the audible sounds or tracks being emitted from the audio transducer, the playing terminal being further arranged to control the quantity of transmitted data, relating to each audio component, sent from the audio source to the playing terminal, the quantity of transmitted data being dependant on the selected focus sound or track.

Slezak teaches an audio source, a terminal, audio transducers, and audio components

comprising audible sounds or tracks and positional data. Slezak teaches that the

playing terminal generates a set of spatialized processed audio data (Col. 4, line 39 –

Col. 5, line 12) and further teaches that distributed computing can split tasks across

local and remote computers (Col. 2, lines 51-57). It is inherent that a set of spatialized

audio data can be created remotely from the playing terminal in place of creating it on

the server side to reduce demands on the server. Slezak also teaches that the user can

control of a focus element (Col. 10, lines 1-15 and Fig. 10, item 294). Slezak however

does not teach two different bit-rates for transmission of the audio components.

Brandenburg teaches a process for scalable coding of audio signals, wherein a low-

quality signal is sent along with an additional signal to be added to the low-quality signal

to achieve a high-quality signal (Col. 1, line 56 – Col. 2, line 31). King teaches that

bandwidth limiting (simulated by high and low pass filtering) effects the perception of

three-dimensional audio (p. 294, Discussion). In light of King's teachings, the process

of scalable coding can be seen to be equivalent to sending the low-pass signal as a

low-quality signal and additional information, such as the information filtered out by the

low-pass filter, to be added together to form the high-quality signal. It would have been

obvious for one of ordinary skill in the art to combine the teachings of Slezak,

Brandenburg, and King for the purpose of utilizing network bandwidth efficiently.

6.   Regarding claim 2, the further limitation of claim 1, see the preceding argument

with respect to claim 1. Slezak teaches a terminal for spatial processed audio.

7.   Regarding claim 3, the further limitation of claim 2, see the preceding argument

with respect to claim 1. Slezak teaches positional data relating to a three dimensional

space for spatial processing.

8.   Regarding claim 4, the further limitation of claim 1, see the preceding argument

with respect to claim 1. The combination of Slezak teaches that the tracks are

transmitted to the terminal. It is inherent that the focus track and the other tracks are sent at predetermined bit-rates.

9.   Regarding claim 6, the further limitation of claim 1, see the preceding argument with respect to claim 1. The combination teaches the transmission of detail and outline data. It is inherent that to save bandwidth, the non-focus elements can be transmitted using just the outline, or low bit-rate, data.

10.   Regarding claim 10, the further limitation of claim 1, see the preceding argument with respect to claim 1. Slezak teaches a user control device that uses a button.

11.   Regarding claim 11, the further limitation of claim 1, see the preceding argument with respect to claim 1. Slezak, Brandenburg, and King teach the features of claim 1, but they do not teach voice recognition. *Official Notice* is taken, for it is well known in that voice recognition is a useful in gathering user input. Voice dictation software has been on sale in the United States prior to filing.

12.   Regarding claim 12, the further limitation of claim 1, see Slezak (Col. 3, lines 53-55). Slezak teaches a wireless data link.

13.   Regarding claim 13, the further limitation of claim 12, see Slezak

... wherein the wireless data link is established over a mobile telephone connection. (Col. 4, lines 1-7). Slezak teaches the use of a wireless network and the use of modems to connect to a network, such as the Internet. It would have been obvious for one of ordinary skill in the art to combine these ideas and implement a wireless or cellular modem, which are well known devices in computer communications.

14.   Regarding claim 14, the further limitation of claim 1, see the preceding argument with respect to claim 1. Slezak teaches that the user can browse sub-elements using the spatialized audio (Col. 6, line 62 – Col. 7, line 17).

15.   Regarding claim 15, see the preceding argument with respect to claim 1. The combination of Slezak, Brandenburg, and King teaches these features.

16.   Regarding claim 16, see the preceding argument with respect to claim 1. The combination of Slezak, Brandenburg, and King teaches these features.

17.   Regarding claim 17, the further limitation of claim 16, see the preceding argument with respect to claim 2. The combination teaches spatialized audio.

18.   Regarding claim 18, see the preceding argument with respect to claim 1. The combination of Slezak, Brandenburg, and King teaches these features.

19.   Regarding claim 19, the further limitation of claim 18, see the preceding argument with respect to claim 2. The combination teaches spatialized audio.

20.   Regarding claim 20, the further limitation of claim 19, see the preceding argument with respect to claim 3. The combination teaches positional data relating to a three dimensional space for spatial processing.

21.   Regarding claim 22, the further limitation of claim 18, see the preceding argument with respect to claim 6. The combination teaches the transmission of detail and outline data. It is inherent that to save bandwidth, the non-focus elements can be transmitted using just the outline, or low bit-rate, data.

22.   Regarding claim 26, the further limitation of claim 18, see the preceding argument with respect to claim 10. The combination teaches a user control device that uses a button.

23.   Regarding claim 27, the further limitation of claim 18, see the preceding argument with respect to claim 11. The office takes *official notice* that voice recognition can be used as an input method.

24.   Regarding claim 28, the further limitation of claim 18, see the preceding argument with respect to claim 12. The combination teaches a wireless data link.

25.   Regarding claim 29, the further limitation of claim 28, see the preceding argument with respect to claim 13. The combination teaches the use of a wireless modem.

26.   Regarding claim 30, the further limitation of claim 18, see the preceding argument with respect to claim 14. The combination teaches the browsing of sub-elements using the spatialized audio.

27.   Regarding claim 31, the further limitation of claim 18, see the preceding argument with respect to claim 14. The combination teaches the use of hyperlinks.

28.   Regarding claim 32, see the preceding argument with respect to claim 1. The combination teaches these features.

29.   Regarding claim 33, see the preceding argument with respect to claim 1. The combination teaches these features.

30.   Claims 5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over

the combination of Slezak, Brandenburg, and King as applied to claim 1 above, and

further in view of "A Wearable Spatial Conferencing Space" by Billinghurst et al.

(hereinafter Billinghurst).

31.   Regarding claim 5, the further limitation of claim 4, see the preceding argument

with respect to claim 4. The combination of Slezak, Brandenburg, and King teach the

features of claim 4, but do not teach that the focus track is transmitted at a higher bit-

rate. Billinghurst teaches that audio culling can be used to alleviate bandwidth

restrictions (p. 80, column 2, first paragraph), and in light of the combination, it is

obvious to send a focus track with high quality and the other tracks at a lower quality. It

would have been obvious for one of ordinary skill in the art to combine the teachings of

Slezak, Brandenburg, King, and Billinghurst for the purpose of efficient bandwidth use.

32.   Regarding claim 21, the further limitation of claim 18, see the preceding

argument with respect to claim 5. The combination teaches these features.

33.   Claims 8, 9, 24, and 25 are rejected under 35 U.S.C. 103(a) as being

unpatentable over the combination of Slezak, Brandendurg, and King as applied to

claim 1 above, and further in view of the paper authored by Kobayashi et al., "Dynamic

Soundscape: mapping time to space for Audio Browsing" (hereinafter Kobayashi).

34.   Regarding claim 8, the further limitation of claim 3, see the preceding argument

with respect to claim 3. Kobayashi teaches a user interface that is mounted on the body

(p. 13, head interface paragraph). The combination of Slezak, Brandenburg, and King

teach the features of the parent claims, however they do not teach the use of head tracking or using a position sensor on a body part for user input. Kobayashi teaches an audio browser, and in one feature is the ability to track the users head movement for the purpose of bringing one of a plurality of sounds into focus within a three-dimensional soundscape. It would have been obvious for one of ordinary skill in the art to combine the teachings of Slezak, Brandenburg, King, and Kobayashi for the purpose of using a more natural user interface.

35.   Regarding claim 9, the further limitation of claim 8, see the preceding argument with respect to claim 8. In the combination, Kobayashi teaches the use of a head-mountable sensor.

36.   Regarding claim 24, the further limitation of claim 18, see the preceding argument with respect to claim 8. The combination teaches these features.

37.   Regarding claim 25, the further limitation of claim 24, see the preceding argument with respect to claim 9. The combination teaches these features.

38.   Claims 7 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Slezak, Brandenburg, and King as applied to claims 6 and 22 respectively above, and further in view of "A 3D Audio Only Interactive Web Browser:..." by Goose et al. (hereinafter Goose).

39.   Regarding claim 7, the further limitation of claim 6, see Goose

... wherein the playing terminal is arranged to receive the burst of audio data, relating to each non-focus component, and to store the burst of data for subsequent replaying at the playing terminal. (p. 367, lines 1-10)

Goose teaches that, in a web browser utilizing audio based links in a 3D audio environment, there is a periodic replaying of a voice for announcement reasons. The combination of Slezak, Brandenburg, and King teach a 3D audio web browser, but do not teach the replaying of burst audio data. It would have been obvious for one of ordinary skill in the art to combine the teachings of Slezak, Brandenburg, King, and Goose for the purpose of an enhanced browsing experience.

40.   Regarding claim 23, the further limitation of claim 22, see the preceding argument with respect to claim 7. The combination teaches these features.

Conclusion

41.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

    Moorer, U.S. Pat. No. 6,072,878,

    Yamauchi, U.S. Pat. No. 6,122,338, and

    Moorer, U.S. Pat. No. 6,904,152.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

DRS

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600